IN THE DRAWINGS:

Please replace Figures 4, 5, 8A, 8B, 10, 11 and 14 with the replacement figures submitted herewith. The changes are matters of form, to respond to the Draftsperson's Notice, and do not include any changes of substance. Please note that Figure 4 is replaced by Figures 4A and 4B, which together disclose the content of original Figure 4.

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REMARKS

Applicants hereby amend the abstract, supply replacement figures for figures 4, 5, 8A, 8B, 10, 11 and 14, amend claims 1 and 14, and add new claims 22-41. The amendment to the abstract responds to the Examiner's objection. The replacement figures respond to the Draftsperson's Notice. The amendment to claim 14 corrects an erroneous dependency, as kindly pointed out by the Examiner. The amendment to claim 1, and new claims 22-41, are supported by the specification, including but not limited to Paragraphs 121 to 127, inclusive, on pages 42 to 44. (See also, for example, and without limitation, Paragraph 20, on pages 7-8, Paragraph 37, on page 14, Paragraph 42, on pages 15-16, Paragraph 51 on page 18, and Paragraph 69 on pages 24-25.)

Amendments to the claims are not an acquiescence to any of the rejections. Silence with regard to any of the Examiner's rejections is not an acquiescence to such. Specifically, silence with regard to Examiner's rejection of a dependent claim, when such claim depends from an independent claim that Applicants consider allowable for reasons provided herein, is not an acquiescence to such rejection of the dependent claim(s), but rather a recognition by Applicants that such previously lodged rejection is moot based on Applicants' remarks and/or amendments relative to the independent claim (that Applicants consider allowable) from which the dependent claim(s) depends. Furthermore, any cancellations of and amendments to the claims are being made solely to expedite prosecution of the instant application. Applicants reserve the option to further prosecute the same or similar claims in the instant or a subsequent application.

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Upon entry of the Amendment, claims 1-41 are pending in the present application.

Telephone Interview

Applicants thank the Examiner for the courtesies extended during the telephone interview conducted on January 20, 2005 between Examiner Holmes and Applicants' undersigned representative. During the interview, Applicants' representative explained that a Response to Notice of Missing Parts had been filed timely on August 10, 2004, containing an executed Declaration with signatures by all eight inventors, on several different pages. It was agreed that Applicants' representative would furnish a further copy of that filing by facsimile transmission. The further copy was provided on January 21, 2005.

Specification Objection

The Examiner objected to the abstract because it contained the phrase "disclosed are." Applicants have amended the abstract to remove the objectionable phrase.

Figures Objections

The Draftsperson objected to Figures 4, 5, 8A, 8B, 10, 11 and 14. The replacement figures respond to the objections. In particular: (a) Figures 8A and 8B are separated; (b) in Figures 4, 5, 10, 11 and 14, the character of lines, numbers and letters is clarified as appropriate; (c) in Figures 4 and 5 the legibility of the numbers and reference characters is improved as appropriate; and (d) in Figure 4 the size of the numbers, letters and reference characters is increased as appropriate.

In order to facilitate these amendments to Figure 4, that figure is replaced by Figure 4A, consisting of the leftmost portion of Figure 4, and Figure 4B, consisting of the

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remainder. The specification has been amended to replace references to Figure 4 with references to Figure 4A and/or Figure 4B.

Claim Objection

The Examiner objected to claim 14 as being improperly dependent on itself, and suggested that the intended meaning was that it be dependent from claim 13. The Examiner was correct as to the intended meaning, and Applicants have amended claim 14 to set forth the proper dependency.

Claim Rejections - 35 U.S.C. § 101

The Examiner rejected claims 1-20 as being directed at nonstatutory subject matter, namely an abstract idea, and suggested that if claims 1-20 were amended to refer to a "computer," a "processor," "computer-implemented" or the like, as set forth in the written description, the rejection would be withdrawn. Applicants have amended claim 1 to require that the method be carried out "[i]n a computer system having a user interface including a display and an input device," and respectfully suggest that this is fully responsive to the Examiner's rejection of claim 1 under § 101. Because claims 2-20 depend from claim 1, this amendment also has effect with respect to those claims.

Claim Rejections - 35 U.S.C. § 102

The Examiner rejected claims 1-21 under 35 U.S.C. § 102 as being unpatentable over U.S Patent App. Pub. No. US 2003/0055614A1 by Pelikan et al. ("Pelikan")

Independent claim 1 (as amended) recites a device for carrying out an interactive evolutionary computing method. According to the claim, the method carried out includes "generating a solution set based on an evolutionary scheme *in which an objective function is*

a priori mathematically unexpressed." (Emphasis added.) The emphasized language imposes a limitation on the evolutionary schemes to which the method applies. In *other* evolutionary schemes, as the specification states, objective or fitness functions exist, before the method is used, which express the fitness of solutions. Hence, when an individual potential solution is generated in the course of such *other* schemes, its fitness may be calculated or otherwise determined based on a specific a priori mathematically-expressed function.

This is true of Pelikan. For example, Pelikan states that "[t]he selection operator may comprise, by way of particular example, *a fitness function* that measures the fitness of each of the members of the first set and selects only members having a high fitness to create the second set." (¶ 35) (Emphasis added.) Pelikan goes on to state that "there are a number of particular fitness functions that may be appropriate for practice with the invention." (¶ 36) Pelikan then discloses "interactive fitness (evaluated with help of a human)." (¶ 36) Thus, Pelikan discloses that humans may be used to interactively *evaluate* a fitness function. Pelikan does *not*, however, disclose or suggest that the process it describes can proceed *without* the use of an a priori fitness function at all.

In the method of claim 1, on the other hand, as the claim recites, there is no a priori fitness or objective function in the evolutionary scheme, and the user may evaluate the proposed solution set completely subjectively *without the use of an a priori fitness function.* Those *subjective* user evaluations, rather than objective fitness function scores for the proposed solution set, are used to generate a further set of solutions.

Thus, Applicants' (amended) independent claim 1 is not taught or suggested by Pelikan. It follows that independent claim 1 is allowable for this reason.

Dependent claims 2-20 all depend from claim 1. It follows that, insofar as claim 1 is allowable, claims 2-20 also are allowable.

Independent claim 21 is directed at a system, comprising a processor, with instructions for causing the processor to carry out certain specified steps, including presenting data based on a solution set, which solution set is based on an evolutionary scheme *in which an objective function is a priori mathematically unexpressed.* The Examiner initially rejected this claim along with claim 1 on the basis of Pelikan. However, the reasoning set forth above -- which establishes that Pelikan utilizes a fitness or objective function, and fails to disclose or suggest that the process it describes can proceed *without* the use of an a priori fitness function – also establishes that claim 21 should be allowed.

New Claims

New claim 22 is directed to a device, and in particular "a computer-readable medium having computer-readable signals stored thereon that define instructions" which, when "executed in a computer system having a user interface including a display and an input device," instruct the computer system to perform the method of claim 1, including the limitation that the objective function be a priori mathematically unexpressed. Accordingly, claim 22 is allowable for the same reasons that claim 1 is.

Similarly, new claims 23-41 are dependent from new claim 22, and set forth the device limitations corresponding to the limitations of claims 2-20. Accordingly, claims 23-41 are allowable for the same reasons that claims 2-20 are.

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CONCLUSION

Applicants believe this Amendment and Response to be fully responsive to the present Office Action. Thus, based on the foregoing Remarks, Applicants respectfully submit that this application is in condition for allowance. Accordingly, Applicants request allowance of the application.

Applicants invite the Examiner to contact the Applicants' undersigned Attorney if any issues are deemed to remain prior to allowance.

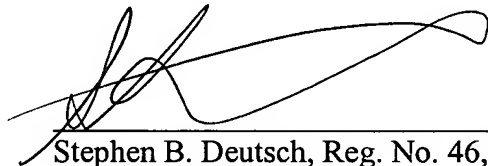Respectfully submitted,

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